ORIGINAL ARTICLE

The evolution of sexually transmitted infections in the Ukraine

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Sex Transm Infect 2002;**78**:219–221

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Accepted for publication 13 December 2001

Objectives: To evaluate trends in the national and regional reporting of syphilis, gonorrhoea, chlamydia, genital herpes, trichomoniasis, and HIV in Ukraine.

Methods: Annual notification rates of infection per 10^5 population in three regions of Ukraine—Donetsk, Mikolaiv, Chernivtsi—and also among children, adolescents, and pregnant women were used as indicators for the spread of sexually transmitted infections (STIs) in the Ukraine from 1994 to 2000. The estimates were based on a review of medical literature, reported data from STD clinics, and local epidemiological surveys. An analysis of the trends was made.

Results: The notification rate of trichomoniasis rose from 284.3 in 1997 to 330.8 in 2000. The same for syphilis was 68.7 per 100 000 population in 1994 peaked in 1996 with 150.9 falling to 91.5 in 2000. The reported incidence of gonorrhoea has been falling recently to 52.7/10^5 in 2000 (a 104.6% decrease since 1994). Chlamydia notification rates, however, rose 2.4-fold between 1995 and 2000 (16.1/10^5 to 54.2/10^5). In the same period there was a 218% increase the reported incidence of genital herpes. STIs are more common in the eastern industrial regions. In the period 1994–7 there was a dramatic 179-fold increase in the prevalence of HIV/AIDS which has plateaued in subsequent years. By January 2001 a total of 36 600 cases of HIV infection (including 2040 people with AIDS) have been reported. The proportion of HIV acquired through injecting drug use is falling (72.7% in 1997 to 54.2% in 2000) in relation to that acquired through sexual contact.

Conclusions: STIs and HIV are a common cause of morbidity in Ukraine.

Sexually transmitted infections (STIs) are among the most common causes of illness in the Ukraine and have far reaching health, social, and economic consequences. The population of Ukraine was 49.4561 million in January 2000. The country possesses a broad network of sexually transmitted disease (STD) clinics and HIV consulting centres in all 27 administrative regions under the state public health service.[1–3] STIs are particularly subject to the influence of the social environment. A considerable shift in their epidemiology in Ukraine is a result of the biological evolution and changes within the economic and social spheres of life. Factors which influence the spread of these infections both at the local and national level, may be summarised[5]:

(1) Biological factors of the microenvironment (microbiological, immunological, neuroendocrine);

(2) Factors determining behaviour (personal psychological peculiarities, cultural standards, customs and traditions, stereotypes of sexual behaviour);

(3) Macroenvironmental factors (the state of health services, social policy, appropriateness of legislation, and the extent to which laws are observed).

Without taking into account all the above mentioned causes it is impossible to give a correct evaluation of the spread of STDs or to influence them effectively. The purpose of this study was to measure national and some regional occurrence of syphilis, gonorrhoea, chlamydia, genital herpes (HSV), HIV, and trichomoniasis in the Ukraine; and to identify the relevant medical and social problems.

METHODS

Annual notification rates of infections per 100 000 population and prevalence in selected groups were used as an indicator for the spreading extent of STIs in the Ukraine and in three regions, Donetsk, Mikolaiv, Chernivtsi, from 1994 to 2000.

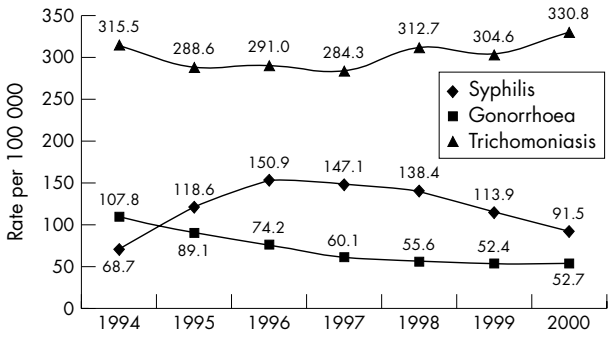

Figure 1 Notification rate of syphilis, gonorrhoea, and trichomoniasis in Ukraine in 1994–2000. Rate per 100 000, the annual rate of the disease per 100 000 of whole population.

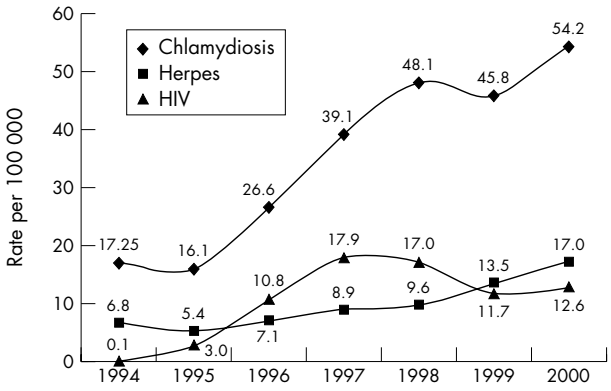

Figure 2 Notification rate of chlamydiosis, herpes, and HIV infection in Ukraine in 1994–2000. Rate per 100 000, the annual rate of the disease per 100 000 of whole population.

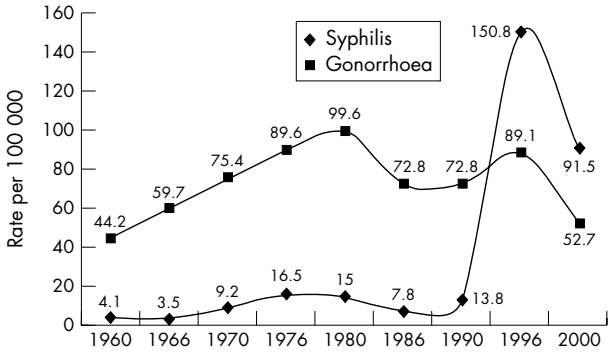

Figure. 3 Notification rate of syphilis and gonorrhoea in Ukraine in 1960–2000. Rate per 100 000, the annual rate of the disease per 100 000 of whole population.

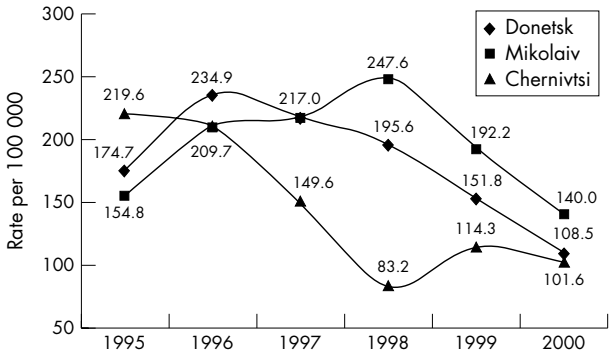

Figure 4 Notification rate of syphilis in selected regions of Ukraine in 1995–2000. Donetsk, Mikolaiv, Chernivtsi. Rate per 100 000, the annual rate of the disease per 100 000 of region population.

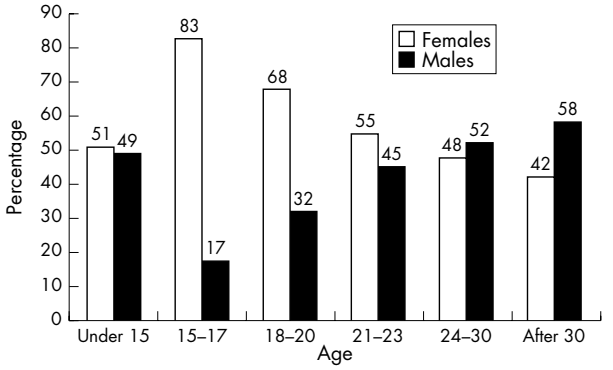

Figure 5 Relativity of males and females by age stratum among patients with syphilis (share all registered cases in percentages).

According to Ukrainian legislation every new case of laboratory confirmed infection must be reported to the regional health department. The information is relayed to the central office of the health ministry of Ukraine where the annual notification rates are calculated. The estimates cited in this paper were based on statistical data of the ministry of health of the Ukraine[3] and review of the medical literature.[2 4] Several epidemiological surveys were also conducted in the aforementioned regions.[2]

RESULTS

An increase in some STDs (syphilis, chlamydia, herpes, and HIV) was observed at the beginning of the 1990s (figs 1 and 2). Gonococcal infection appears to be an exception to this

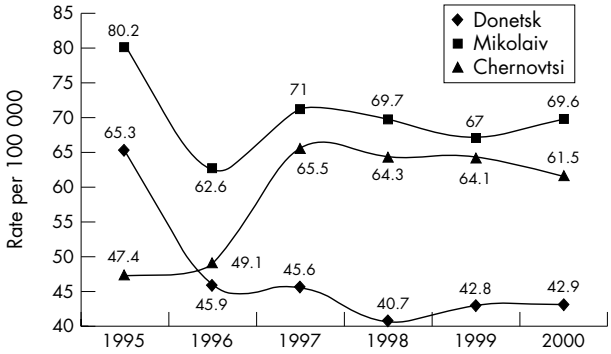

Figure 6 Notification rate of gonorrhoea in selected regions of Ukraine in 1995–9. Donetsk, Mikolaiv, Chernivtsi. Rate per 100 000, the annual rate of the disease per 100 000 of whole population.

trend; this becomes more obvious when comparing the spread of syphilis and gonorrhoea for the past 40 years (fig 3).

The notification rate of syphilis was 113.9 per 100 000 in the Ukraine in 2000. The incidence peaked in 1996 (150.9), with a reported incidence twice that in 1993, and then fell (fig 1). It is noteworthy that the spread dynamics of syphilis in various regions of Ukraine is different, even while the general national trends are preserved (fig 4). Incidence in children under 14 rose from $3.5/10^5$ in 1995 to $5.6/10^5$ in 1999 with the background of falling rates in those aged 14–17 from $170.1/10^5$ to $81.6/10^5$. In the age group 15–20, rates in females are almost five times higher than in males (fig 5).[3] The rate of pregnant patients with syphilis (per 100 000 screened pregnant women) was 143.3 in 1994 rising to 665.8 in 1997, and falling to 330.4 in 2000. Reports of cases of congenital syphilis rose from seven in 1993, to 14 in 1994, 35 in 1995, 71 in 1996, 83 in 1997, 79 in 1998, 71 in 1999, and 63 in 2000.[3]

In the 1970s and 1980s gonorrhoea was more common than syphilis (fig 3). Since the mid-1990s the notification rate of gonorrhoea has been slowly declining in the Ukraine such that the notified rates in 2000 were half those reported in 1994 (fig 1). The decrease has been reported in all the regions of Ukraine, although there has been a recent upturn in Mikolaiv and Chernivtsi provinces (fig 6).

Trichomoniasis appears to be the commonest STI in the Ukraine buts its notified rates have been relatively stable over the past 6 years (fig 1).[3] In 1993 chlamydia infection became subject to obligatory registration. Since 1995 the number of patients affected with chlamydia has increased 3.4 times (fig 2).

The point evaluation of incidence of HSV genital infection in Ukraine is difficult as reporting is not mandatory. On some estimates, the incidence of genital herpes in Ukraine reaches $80–200/10^5$ population.[5] The officially registered rate of herpes is approximately $10/10^5$. There was a 217.8% increase of reported incidence of genital herpes (in 1995, 5.4 and in 2000, 17.0). The rate in 2000 was 17.0 was 3.2 times the notification rate in 1995[3 5] (fig 2).

The first cases of HIV infection in Ukraine were registered in 1987 and by 1994 a total of 118 cases had been registered.[3 4] In 1995 the number of HIV infections reported rose dramatically 34-fold (to 1490, fig 2) and 179-fold by 1997. The growth of HIV infection was registered in all the administrative territories. In subsequent years the incidence plateaued: population rates in 2000 were 12.6 per 100 000 whole population. A total of 36 600 cases of HIV infection (including 2040 with AIDS) have been reported by January 2001.

The relative share of injecting drug use as a risk factor for HIV has declined from 72.7% in 1997 to 54.2% in 2000 alongside an increase in infection through sexual contact. The prevalence of HIV infection among various populations is

Table 1 The prevalence of HIV infected among selected groups in the Ukraine (% of all tested)

Population group	1998	1999
All population	0.49	0.46
Blood donors	0.07	0.064
Pregnant women	0.12	0.16
Tested for clinical indications	0.63	0.75
Injecting drug users	8.58	8.6
STD patients	0.61	0.8
Inmates	3.47	4.2

shown in table 1. In 1996 some 1400 new cases of HIV were registered in prisons. In 1987–98 502 HIV positive pregnant women and 491 HIV positive babies had been reported. Only 29.7% of these women were injecting drug users. In 1987–98 502 HIV positive pregnant women and 491 HIV positive babies had been identified. Only 29.7% of these women were injecting drug users.

DISCUSSION

An increase in some STIs (syphilis, chlamydia, herpes, HIV) has been observed in the Ukraine since the beginning of the 1990s. Trichomoniasis and syphilis are the commonest. Infection with the gonococcus appears to be an exception to this tendency. It is possible that this decline may be because in most cases modern gonorrhoea takes asymptomatic forms.[5]

The existing system of STD reporting in Ukraine was inherited from the USSR. It was reliable and worked well; but, now according to some estimates based on population studies the notification system is valid in only 60–80%. Lack of reporting of STIs, and especially gonorrhoea, is common for patients managed privately.[5 7] The number of doctors who have private practice is growing in Ukraine. This may explain some of the apparent decrease of cases of gonorrhoea as with the "over the counter" availability of antibiotics.

Over the past decade, syphilis has gained new clinical and epidemic characteristics in Ukraine. The number of cases of early nervous system involvement and visceral pathology have grown, while there are an increasing number of latent cases and of cases with very scant manifestations on skin and mucous membranes. Syphilis has also penetrated into the better off strata of the population.[5 6] The different spread dynamics of STIs in the various regions of Ukraine reflect local factors. They are more common in eastern industrial regions.

While, according to official returns, chlamydial infections are less common than trichomoniasis and syphilis, this may merely reflect incomplete reporting. According to the information obtained by us earlier, chlamydia is a widely distributed sexually transmitted infection.[6] It has been suggested that 8–12% of the sexually active age groups are infected with the organism.[7] Laboratory diagnostics of chlamydia have become more available in Ukraine and are used by many private physicians. However, the commonest in use are cheap serological enzyme immunoassays. Confirmatory tests based on culture and nuclear acid amplification technique are not so widely used.

The exponential growth of HIV in 1994–7 has been followed by a plateau phase, where the proportion of patients infected through injecting drug use has declined in favour of infection through sexual contacts, although it still remains the dominant risk group.

The process of economic and political reforms in Ukraine has made the problem of sexually transmitted diseases more acute. The sexual revolution which took place in western countries in the 1960s reached Ukraine after the collapse of the Soviet Union. People's ideas as to what is permitted in their sexual life and what is not have changed very quickly, lagging far behind the attitude to venereal diseases. Such emotions as shame, fear, fastidiousness, and blame prevail when people think of venereal diseases. Narrow views of this kind are, unfortunately, typical of some doctors in Ukraine. Efforts are required to facilitate education, condom use, and prevention of drug addiction. Unfortunately, the scale of these measures is insufficient. Control of STIs presupposes common efforts of various state institutions because it includes not only medical, but also legal aspects. For the past 10–15 years the epidemiology of STIs has considerably changed in Ukraine. This is may be connected with the following tendencies:

(1) Exponential spread of HIV. The fact that HIV infection is spreading fast in the Ukraine is a big concern. So substantial financial resources are assigned for control of AIDS. The result is removing these resources from the control of other STIs.

(2) A quantitative increase in the core (high risk) groups: prostitutes, drug addicts, tramps, vagrants, and refugees.

(3) The aetiology of the main syndromes of STDs has changed. For example, urethritis and endocervicitis are mainly caused by chlamydia, and not by gonococci as was the case in the 1970s.

(4) The spectrum of complications after STDs has substantially broadened (sterility, miscarriages, ectopic pregnancy, neonatal illnesses, reactive arthritis, neurological complications).

(5) Sensitivity of infecting agents of bacterial and viral aetiology to antibiotics has decreased. Treatments that were considered to be effective not long ago are quickly becoming outdated.

However, more in-depth epidemiological studies are needed to understand the real extent of these influences and control the epidemic.

ACKNOWLEDGEMENT

Supported in part by a grant from the health ministry of Ukraine 08.00, 0100V001040.

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